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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/473,137	12/28/99	MIYAMOTO M	991517

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EXAMINER	
VERDIER, C	

ART UNIT	PAPER NUMBER
3745	8

DATE MAILED: 10/25/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trad marks

Office Action Summary	Application N . 09/473,137	Applicant(s) MIYAMOTO ET AL.	
	Examiner Christopher Verdier	Art Unit 3745	

-- The MAILING DATE of this communication appears on the cov r sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 September 2001* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-32* is/are pending in the application.

4a) Of the above claim(s) *2-6,8,9 and 23-29* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,7 and 13-20, 22, 30-32* is/are rejected.

7)☒ Claim(s) *10-12 and 21* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *28 December 1999* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☒ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *5* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

Election/Restriction

Applicant's election without traverse of species 14, drawn to figures 29-30 in Paper No. 7 is acknowledged. Applicants have indicated that they believe claims 1-3, 5, 7-22, and 30-32 read on species 14. The examiner respectfully disagrees and notes that claims 1, 7, 10-22, and 30-32 read on the elected embodiment.

Claims 2-6, 8-9, and 23-29 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 7.

Specification

The abstract of the disclosure is objected to because it is more than one paragraph in length. Correction is required. See MPEP § 608.01(b).

The disclosure is objected to because of the following informality: Appropriate correction is required. The specification should be amended to indicate that this application is a continuation in part of application 09/104,171.

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

Claims 10-12 and 21 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from any other multiple dependent claim. See MPEP § 608.01(n). Accordingly, claims 10-12 and 21 have not been further treated on the merits.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Claims 1, 13-14, and 16-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Japanese Patent 11-62,879 (figures 1-2). Note the turbomolecular pump having stator 4

surrounding rotor 6, casing 1/16, with a clearance 27 being formed between the stator and casing so that when abnormal torque is applied from the rotor to the stator, direct impact transmission is prevented from the stator to the rotor. Note impact absorbing member 22 between the stator and casing, with the stator having a multiple structure comprising stator vanes. The stator and rotor comprise a vane pumping section, and the impact absorbing structure comprises an inner casing surrounding the vane pumping section, with the inner casing being fixed by fitting part of an inner surface of the inner casing to a cylindrical portion of the casing 16.

Claims 1, 13-15, 16-19, and 31-32 are rejected under 35 U.S.C. 102(b) as being anticipated by Japanese Patent 61-25,994 (figure 1). Note the turbomolecular pump having stator 11 surrounding rotor 13, the casing 27, with a clearance being formed between the stator and casing so that when abnormal torque is applied from the rotor to the stator, direct impact transmission is prevented from the stator to the rotor. Note impact absorbing member 27 between the stator and casing, with the stator having a multiple structure comprising stator vanes 16. The impact absorbing member also functions as a temperature adjusting mechanism that cools the stator. The stator and rotor comprise a vane pumping section, and the impact absorbing structure comprises an inner casing surrounding the vane pumping section, with the inner casing being fixed by fitting part of an inner surface of the inner casing to a cylindrical portion of the stator.

Claims 16-19 and 31-32 are rejected under 35 U.S.C. 102(b) as being anticipated by Japanese Patent 57-212,395 (figure 2). Note the turbomolecular pump having stator 3 surrounding rotor 2, the casing 4, vane pumping section near 3, and impact absorbing structure 15. The impact absorbing structure comprises an inner casing surrounding the vane pumping section. A clearance is provided between the inner casing and the casing portion. The impact absorbing member also functions as a temperature adjusting mechanism that cools the stator.

Claims 16-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Stones (figure 3). Note the turbomolecular pump having stator 56 surrounding rotor 50, the casing 22, vane pumping section near 54, and the unnumbered laminated impact absorbing structure. The impact absorbing structure comprises an inner casing surrounding the vane pumping section. A clearance is provided between the inner casing and the casing portion.

Claims 1, 7, 13-14, and 16-17, 19, 20/17, 20/19, and 30 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent Application Publication U.S. 2001/0016160 A1. Concerning claims 1, 7, and 13-14, note in figures 1-2 the turbomolecular pump having stator 32/38a surrounding rotor 12, casing 14a, with a clearance 42 being formed between the stator and casing so that when abnormal torque is applied from the rotor to the stator, direct impact transmission is prevented from the stator to the rotor. The stator may include a groove pumping section. Note impact absorbing member 38a between the stator and casing, with the

stator having a multiple structure comprising stator vanes. Concerning claims 16-17, 19, 20/17, 20/19, and 30, note in figures 5-13 the turbomolecular pump having stator 50 surrounding rotor 12, the casing 14, vane pumping section 32, and impact absorbing structure 58. The impact absorbing structure comprises an inner casing surrounding the vane pumping section and is a friction reducing member. The vane pumping assembly is attached to the casing by way of the friction reducing member.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Claim 7 is also rejected under 35 U.S.C. 103(a) as being unpatentable over either (Japanese Patent 61-25,994 or 57-212,395) in view of Miki. The Japanese Patents 61-25,994 or 57-212,395 disclose turbomolecular pumps substantially as claimed as set forth above, but do not disclose that the stator assembly includes a groove pumping section spacer.

Miki (figure 2) shows a turbomolecular pump having a groove pumping section spacer 7 with grooves 7a therein as part of the pumping section, for the purpose of increasing compression.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to form the turbomolecular pumps of either Japanese Patent 61-25,994 or 57-212,395 such that the stator assembly includes a groove pumping section spacer, as taught by Miki, for the purpose of increasing compression.

Claim 20/18 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application Publication U.S. 2001/0016160 in view of Japanese Patent 11-62,879. U.S. Patent Application Publication U.S. 2001/0016160 discloses a turbomolecular pump substantially as claimed as set forth above, including a friction reducing mechanism 58 located between the inner casing and the stator or casing, but does not disclose that a clearance is provided between the inner casing and the casing.

Japanese Patent 11-62,879 (figures 1-2) shows a turbomolecular pump having a stator 4 surrounding a rotor 6, a casing 1/16, and a clearance 27 formed between the stator and casing, so that when abnormal torque is applied from the rotor to the stator, direct impact transmission is prevented from the stator to the rotor.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to form the turbomolecular pump of U.S. Patent Application Publication U.S. 2001/0016160 such that a clearance is provided between the inner casing and the casing, as taught by Japanese Patent 11-62,879, for the purpose of preventing direct impact transmission from the stator to the rotor when abnormal torque is applied from the rotor to the stator.

Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over either (Japanese Patent 61-25,994 or 57-212,395 or Stones) in view of Schutz. The Japanese Patents 61-25,994 or 57-212,395 or Stones disclose turbomolecular pumps substantially as claimed as set forth above, but do not disclose that the casing portion is comprised of a high thermal conductivity material.

Schutz (figure 2) shows a turbomolecular pump having a casing 2 made of aluminum, which is known to be a high thermal conductivity material, for the purpose of providing good conduction of heat.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to form the turbomolecular pump of either (Japanese Patent 61-25,994 or 57-212,395 or Stones) such that the casing portion is comprised aluminum, as taught by Schutz, for the purpose of providing good conduction of heat.

Prior Art

Prior art made of record but not relied upon is considered pertinent to Applicant's disclosure and consists of 4 patents.

Okamura and Japanese Patents 3-124,998, 63-266,190, and 3-290,092 are cited to show turbomolecular pumps with heaters/coolers.

Certified Copies of Foreign Priority Documents

Applicant has not filed a certified copy of Japanese applications 187681/1997 and 29160/1998 as required by 35 U.S.C. 119(b).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Verdier whose telephone number is (703) 308-2638. The examiner can normally be reached on Monday-Friday from 9:00 a.m. to 5:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look, can be reached on (703) 308-1044. The fax phone number for this Group is (703) 305-3588.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0861.

CV
October 23, 2001

Christopher Verdier
Primary Examiner
Art Unit 3745